

Remaking the School Children of a Big City

By FRANK M. CHASE

RESTORING tone to under-nourished muscles is the first essential to their training," the physical director held. "Feeding the brain cells," said the supervisor of hygiene, "is an educational matter." On the basis of these views a city's children have been remade.

Early in 1919, Dr. Fred Burger, director of physical education in the Kansas City schools, felt that his department should do some additional health work. This led to the employment of a supervisor of hygiene, whose task was to see what could be done for the health of the children in a school system having neither physicians, nurses nor dentists. Tackling the job earnestly and thoughtfully, the supervisor's first step was to determine existing conditions. To this end she conducted a rapid weight-height survey of 55 grade schools. Federal agencies at that time were calling attention to the alarming percentages of malnourished school children, the estimates ranging from 20 to 30 per cent, and it was assumed that the schools of Kansas City were not exceptional in this respect. The results of the survey indeed not only justified this assumption, but revealed a serious health emergency. At least an average percentage of the children were below standard, while in the school where malnutrition had its greatest hold, 41 per cent of the pupils were 10 per cent or more under-weight.

To determine what remedial measures should be taken, a complete health service was provided the under-weight children of this school. This was in charge of the supervisor of hygiene, and consisted of medical, nurse and dental service; correction of defects; and mid-session meals on the "protective feeding" plan, the main feature of which is the serving of milk.

Owing to the objection of parents, not all the children in the school could be included in the test. This divided the under-weight pupils into two almost equal groups, there being 112 who received the school feeding, and 109, identical in physical condition, who were regarded as the control group.

The test continued nearly 10 weeks. At the end of the period, despite adverse conditions and handicaps unremoved, it was found that the demonstration group had made a gain of 231 per cent, or 40 ounces each, the normal gain (100 per cent) for the group being 18 ounces each. The control group, on the other hand, which received none of the health service, lost four ounces, or 24 per cent, each. The total gain of the demonstration group over the control group, therefore, was 255 per cent. As striking, perhaps, is the fact that this school, which ranked the lowest, or fifty-fifth, in the spring weighing ranked third in September, the difference undoubtedly being attributable to the intensive health service.

Manifestly so complete a health program, which was supplied only through the excellent co-operation of the local anti-tuberculosis society, could not be obtained at once for all the under-weight pupils of the city. Out of her knowledge of local conditions and from the results of the test, however, the supervisor of hygiene recommended the employment of an adequate number of school nurses and the feeding of milk in school, at least for the under-weight pupils. A departure so radical as providing milk for the children in school met, of course, with objections; the school-room, it was said, is a place for mental, not physical, feasting. But the supervisor stood her ground, insisting that the proper nourishment of the brain is of pedagogical importance, and was backed by the physical director's opinion heretofore indicated. Several of the principals, too, were convinced by the results of the test and began at once to serve milk in their schools on their own initiative, many more of them doing so in the autumn.

Coincident with the adoption of milk feeding was the addition of scales to the school equipment. "A department of physical education without weights and measures is as absurd as would be an apothecary shop, and the results similar," declared the supervisor of hygiene. All the 87 grade schools in the city were equipped with scales by September, the use of which indicated that in that month more than 30 per cent of the pupils in the schools of Kansas City were seriously (10 per cent or more) below standard weight. The

scales, too, were soon giving ample proof of the effects of the milk feeding. Wherever it had been instituted the undersized bodies immediately began to regain their normal flesh, while the teachers noticed the improved lessons and attention.

These early results, illustrating concretely the effectiveness of the milk feeding, gave a decided impetus to the entire school health program. New plans were laid, and the force of nurses increased as rapidly as possible. "Wipe out malnutrition" became the slogan of the department of physical education, and the second half of the year opened with all forces organized for an aggressive campaign to reduce the number of under-weight children.

In the work that has followed Kansas City's good fortune in the choice of Maud A. Brown as supervisor of hygiene has been shown many times. After graduating from the University of Iowa, where she specialized in biology, she spent a number of years in teaching. For seven years immediately before going to Kansas City, she taught in the public schools of Los Angeles. During half this time she was head of the biology department in one of the high schools, where she became especially interested in the problem of hygiene for high school girls. She also was assistant supervisor of the science teaching in the grade schools of that city several years. With this thorough training and experience in teaching is coupled a sincere love of children

held each spring. Heretofore this has been a temptation to thousands of children to "train down" to a point far below that for the best interests of their health. Since the last track meet, however, the physical education department has established a weight standard for participants, barring the children who are under-weight from competing in the contests.

The large increase in the staff of school nurses has doubtless contributed to the improvement in the health of the pupils. When the health work began in 1919, there were no nurses in the Kansas City schools. Last year, 1919-1920, there was one to every 5,000 children. Since, the number has grown, until in the school year recently closed a nurse was employed for every 1,400 pupils, Kansas City now ranking among the foremost cities of the United States in this respect.

The nurses' service, however, represents the defensive side of the war on malnutrition. The aggressive factor in the fight is the milk feeding, which has been established in all but five or six grade schools of the city. Then, coupling the health work of the school with the home, the backbone of the entire plan, is the periodic weighing and the report to the parents.

At first all the grade children of the schools serving milk received the mid-session lunches. The principals also arranged the details of the work for each school, and attended to financing the supplies. Later a uniform plan went into effect, whereby the domestic science department took charge of the milk feeding, the department of physical education recommending the children to receive the extra nourishment. Under this arrangement, which has been in effect the past year, the milk is prescribed for only those children who are 10 per cent or more under weight and those in the primary grade and kindergartens, though other pupils may have it if they so desire and their parents assent.

When feeding-time comes each child who doesn't weigh what he should for his age and height gets a half-pint bottle of cold milk, a straw and a graham cracker or two, and proceeds to enjoy his lunch. The usual time for serving the milk is just before recess. In a number of the schools the pupils receive the milk twice daily, or before each recess, but the general plan is to provide only the mid-morning ration. The milk, straw and crackers cost the child five cents. In nearly every case the parents pay this charge, but where they cannot the under-nourished boy or girl gets the milk just the same.

Edge to the pupils' interest in good health is obtained by classifying them according to their physical condition. After each of the thrice-a-year weighings they are divided as follows: Those 10 per cent or more under weight; those under weight, but less than 10 per cent; and those normal or above the normal weight for children of their heights and years. Every child's name, with his age, height, normal weight and actual weight, is then placed on a wall chart within easy reach of his eye and pencil. At the bottom of the chart are tables for determining normal weight and normal rate of growth, so that every one may tell whether the milk drinkers are making progress or the others are slipping back.

In addition each child receives a card, on one side of which are recorded his weight, height and normal weight. On the reverse side are a number of health rules. The children who are 10 per cent or more under-weight get red cards; those less than 10 per cent under-weight, yet below normal, get blue cards, while those having the correct quota of flesh or more receive white cards. To the pupils these cards represent tangible evidence

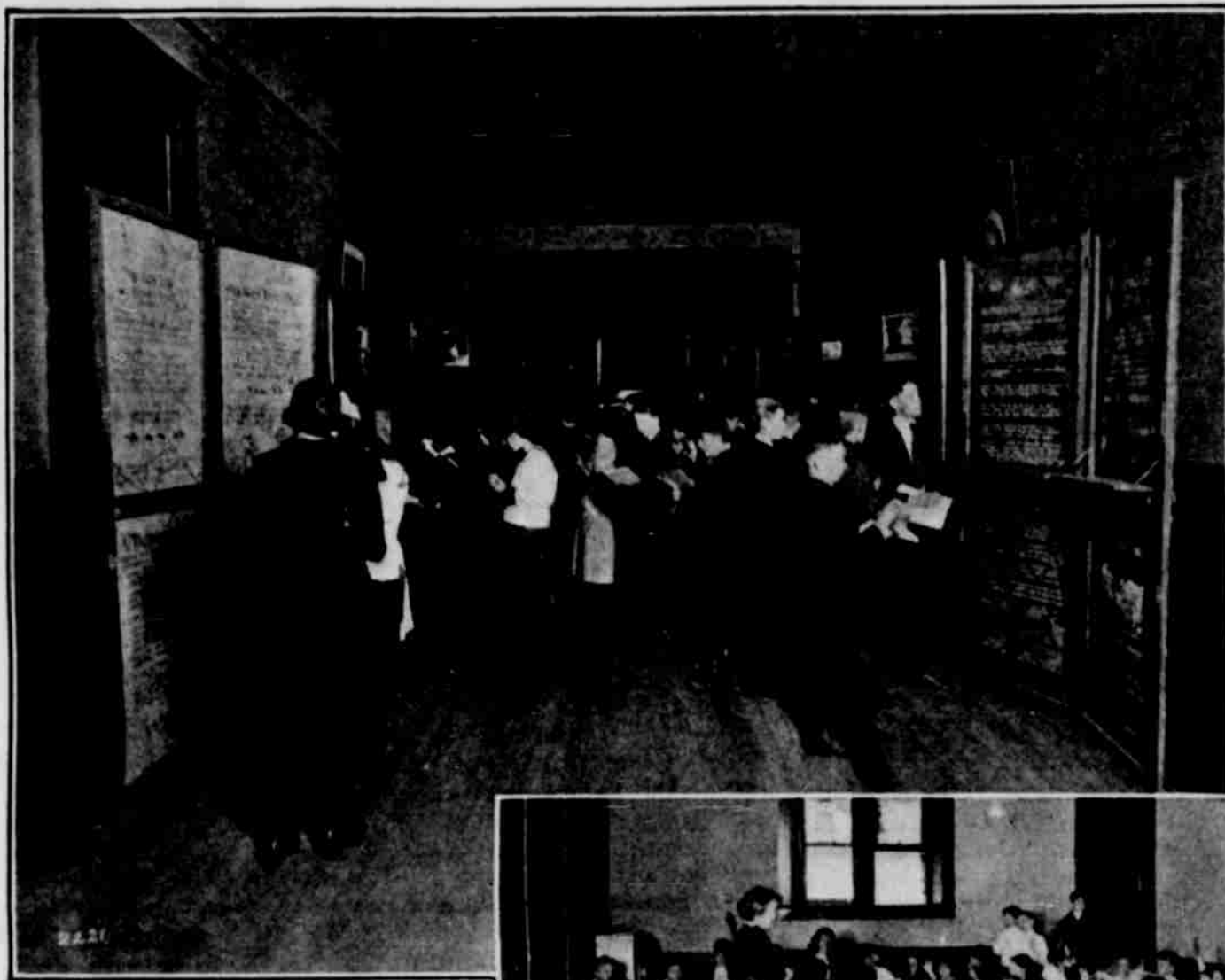
of a proper or inferior condition, with the result that they strive constantly to possess the white cards and get rid of the red and blue ones.

An especially close check is kept on the weight of the pupils receiving milk. Besides the regular weighings in January, June and September, they are weighed monthly by the classroom teacher.

In this connection, consider the forces centered on the malnutrition problem of Kansas City—teacher, nurse, mother and extra nourishment at school. This is an ideal combination. How it works may be illustrated by what happens when Johnny takes the little card bearing the information relative to his weight home to his parents. It is largely a story of what "teacher says."

"Teacher says," he tells his mother, "that if I am as much as 10 per cent below standard it means I am breaking some of the health rules on the back of the card, and that if you will help me to keep them this month, probably I will weigh more next time."

Month after month the card comes back, and with it what "teacher says" every time: "Teacher says I mustn't go to the movies at night"; "teacher says to eat more spinach"; "teacher says to sleep with the windows open." And what "teacher says" has its effect, of course. The recorded gains of the malnourished children show that.



The teaching of formal physiology in Kansas City schools has been largely displaced by instruction in the simple things that go to make health. This class is absorbing such information from a special exhibit which the hygiene division of the physical education department sends from school to school.



Miss Maud A. Brown, supervisor of hygiene in the public schools of Kansas City, Mo., knows how to arouse the pupils' interest. These youngsters are getting some essential lessons in foods from her that are certain to go home with them.

and unusual ability as an instructor. Thus she has brought to her position an admirable fitness for directing the health work of a city's schools, as the results that she has obtained further indicate.

Among the means of attack on the malnutrition problem has been the weighing and measuring of every child three times a year by the teachers of physical education or other members of the department, these examinations taking place in September, January and June. In September, 1919, it will be remembered, approximately 30 per cent of the pupils were seriously under weight. But by January, 1921, or only 16 months later, the percentage of under-nourished children was halved, being but 15 per cent. And this despite the fact that during the summer vacation, the school health program being relaxed, two-thirds of the pupils who had been restored to normal from the 10-per-cent-under-weight class, slipped back into their old under-nourished condition.

The weighing for June, 1921, has not been tabulated. A cursory examination indicates that a slight rise in the number of under-weight children is to be expected, as occurred between January and June, 1920. This is due partly to lighter underwear, but mostly to preventable causes. One of these, which the department now believes has been removed, is the city field meet